In the claims:

Please amend the claims as follows:

1. (Amended) A receiver, comprising:

a plurality of averaged waveforms, each said averaged waveform comprising an average of a plurality of FQPSK waveforms;

a plurality of correlators, to correlate an input signal with each of said averaged waveforms of said plurality to form correlations; and

a trellis decoder using said correlations to make decisions on the transmitted signals.

2. (Amended) A receiver as in claim 1, wherein said plurality of averaged waveforms each represent four FQPSK waveforms.

3. A receiver as in claim 1, further comprising an input filter which filters an input signal.

4. (Amended) A receiver as in claim 1, further comprising a demodulator, receiving an input signal, and producing demodulated complex signals.

5. (Amended) A receiver as in claim 4, wherein said demodulated complex signals include an in-phase signal and a quadrature signal component.

6. (Amended) A receiver as in claim 2, wherein there are four of said correlators to correlate said FQPSK waveforms.

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7. (Amended) A receiver as in claim 1, wherein each of said plurality of averaged waveforms include a plurality of basic FQPSK waveforms which have similar characteristics.

8. (Amended) A receiver as in claim 7, wherein each averaged waveform comprised a combination average of four FQPSK waveforms.

9. (Amended) A method, comprising:

obtaining a plurality of basic waveforms which represent trellis waveforms for FQPSK or FQPSK-B;

averaging groups of said plurality of waveforms to form averaged waveforms, wherein a number of said averaged

waveforms is less than a number of said plurality of waveforms; and

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correlating an FQPSK-B input signal against said averaged waveforms to form a group of signals to be processed by a trellis decoder.

10. A method as in claim 9, wherein said averaging groups comprises averaging four of said FQPSK-B waveforms to form each averaged waveforms.

11. A method as in claim 9, further comprising filtering an input signal, and wherein said correlating comprises correlating against a filtered input signal.

12. (Amended) A method as in claim 9, further comprising producing demodulated signals form input signals and a set of correlation from said demodulated signals.

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13. (Amended) A method as in claim 12, wherein said demodulated signals include an in-phase signal and a quadrature signal.

14. (Amended) A method as in claim 9, wherein said correlating comprises using four of said correlators to correlated the demodulated inphase and quadrature input signal with said FQPSK-B waveforms.

15. A method as in claim 9, wherein said plurality of averaged waveforms include a plurality of waveforms which have similar characteristics.

16. A method as in claim 9, wherein each averaged waveforms comprise a combination of four FQPSK waveforms.

17. A receiver, comprising:

a filter element, receiving an input FQPSK-B signal and producing a filtered FQPSK-B signal; and

a Viterbi Algorithm receiver, producing demodulated signals based on said FQPSK-B input signals.

18. A receiver as in claim 17, wherein said Viterbi Algorithm receiver compares said filtered FQPSK-B signal with a plurality of averaged signals.

19. A method of receiving an FQPSK-B signal, comprising:

obtaining a plurality of basic FPQSK-B signals associated with modulation of an FQPSK-B signal;

averaging said plurality of basic FQPSK-B signals to form a plurality of averaged signals; and

comparing an input coded FQPSK-B signal with said plurality of averaged signals to carry out the modulation.

20. A method as in claim 19, wherein there are 16 of said basic FQPSK-B signals, and wherein there are four of said averaged signals.

Please add the following new claim.

21. (New) A receiver as in claim 1, wherein said FQPSK waveform are FQPSK or FQPSK-B, waveforms.